

ABSTRACT

The invention is directed generally to the structure of prenyltransferases, particularly undecaprenyl pyrophosphate synthase, an enzyme important in bacterial 5 cell wall synthesis. The invention relates to the crystal structure of undecaprenyl pyrophosphate synthase from *Staphylococcus aureus* and the interaction with a cofactor and ligands. The invention also relates to the structure of ligand and cofactor binding sites.

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